

Notice of Allowability

Application No.

10/612,200

Examiner

Arnold M Kinkead

Applicant(s)

MAXIM ET AL.

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 07-03-03.
2. ☒ The allowed claim(s) is/are 31-44.
3. ☒ The drawings filed on 07-03-03 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date <u>02-23-04</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

Art Unit: 2817

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Steven Lin on August 20, 2004 .

The application has been amended as follows:

The first paragraph of the specification has been updated with regards the continuation data as follows:

" 10/043,558 filed Jan. 10, 2002" is now—10/043,558 filed Jan. 10, 2002, now U.S. patent 6,690,240—.

37. (Currently amended) A loop filter for a phase locked loop ("PLL") circuit which locks a frequency of a signal to a reference frequency, comprising:

a proportional path circuit for generating a proportional output signal based on a detected instantaneous phase difference for locking a frequency of a signal for the PLL circuit to a reference frequency; and

the proportional path circuit which receives a charge pump output and determines and holds a charge to be directed to or taken from a PLL circuit throughout an update period based on a detected phase difference for the update period for locking a frequency of a signal for the PLL circuit to a reference frequency and wherein the proportional path circuit provides an independent proportional path output; and

an integral path circuit that is separate and independent from the proportional path circuit wherein the integral path circuit generates an integral path output that tracks

Art Unit: 2817

an overall input signal level including prior proportional output signals generated by the proportional path circuit; and

a summer that receives and sums the proportional path output and the integral path output to provide a low-jitter loop filter output to a vco.

41. (Currently amended) A method of implementing a loop filter for a phase locked loop ("PLL") circuit which locks a frequency of a signal to a reference frequency, comprising:

separating a proportional path circuit from an integral path circuit so that the proportional path circuit and the integral path circuit are independent from each other wherein, the proportional path circuit which receives a charge pump output and determines and holds a charge to be directed to or taken from a PLL circuit throughout an update period based on a detected phase difference for the update period for locking a frequency of a signal for the PLL circuit to a reference frequency and wherein the proportional path circuit provides an independent proportional path output ; and wherein, the integral path circuit receives another charge pump output;

generating, by the proportional path circuit, a proportional output signal based on a detected instantaneous phase difference for locking a frequency of a signal for the PLL circuit to a reference frequency; and

generating, by the integral path circuit, an integral path output that tracks an overall input signal level including prior proportional output signals generated by the proportional path circuit; and

summing, by a summer, the proportional path output and the integral path output to provide a low-jitter loop filter output.

Art Unit: 2817

2. The following is an examiner's statement of reasons for allowance: The examiner discussed the prior art Henwood (US 6,229,361), and Masenas et al(6,614,316) with regards the PLL with proportional and integral paths; these references showing the conventional "PI" loop configuration but no suggestion for separating a proportional path... the proportional path circuit holding a charge to be directed or taken from a PLL circuit throughout an update period...and providing an independent proportional path output...

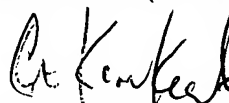
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnold M Kinkead whose telephone number is 571-272-1763. The examiner can normally be reached on Mon-Fri, 8:30 am -5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on 571-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2817

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Arnold M Kinkead

Primary Examiner

Art Unit 2817

Arnold Kinkead

Aug. 20, 2004